

# 14<sup>th</sup> World Cancer & Anti-Cancer Therapy Convention

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## Cancer immunotherapy

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The role of immune system in protection of the host against spontaneously arising tumors has been recognized for several centuries. The Natural Killer Cells perform an important function of immune surveillance against such tumors. However, our understanding of the mechanisms involved and more importantly of the mechanisms by which tumors escape and evade an immune response is limited. We are now beginning to better understand some of the pathways responsible for tumor destruction by immune cells. Therapeutic advances in the treatment of malignant melanoma and renal cancer and now lung cancer have allowed us an opportunity to harness the immune system against tumors and limit the use of cytotoxic chemotherapy with its attendant side effects. We still do not fully understand the epitopes on tumor cells towards which NK cells and other components of the immune system are directed; doing so will enable us to develop more effective immune therapies which have a sustained and effective response against tumors. Enrichment of Tumor Infiltrating Lymphocytes, the use of chimeric antigen receptors, anti CTLA-4, PD-1 and PD-L1 directed therapies are a beginning in that effort and the combination of cellular and humoral approaches against tumors would likely allow for effective and relatively non-toxic and safer mechanisms of achieving durable and possibly life-long tumor control. Such approaches could also be utilized in primary prevention of sporadic and familial tumors. The history and current landscape of immune therapies is discussed. Also discussed are the toxicities and adverse effects associated with the use of immune therapies and possible future approaches of combinations of different components of the innate and adaptive immune systems, as well other classes of agents (chemotherapy, biological agents and radiation therapy). Possible experimental and clinical trial models are proposed.

## Biography

Sanjay R Jain has obtained his Medical degree from the University of Rajasthan in India and then pursued his MS and PhD in Immunology at Kent State University in Kent, OH. He has then completed his Residency training in Internal Medicine at Brown University in Providence, RI, and his Fellowship training in Hematology and Oncology at Harvard Medical School in Boston, MA. He has been in academic medicine since 1999 and particularly interested in novel drug discovery and development, especially immune therapies and the toxicities associated with the use of these agents.

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